



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/660,730

09/12/2003

Abraham Gross

Q77482

4923

23373 7590 05/17/2007
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

HEINRICH, SAMUEL M

ART UNIT

PAPER NUMBER

1725

MAIL DATE

DELIVERY MODE

05/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/660,730	Applicant(s) GROSS ET AL.	
	Examiner Samuel M. Heinrich	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 188-191 and 314 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 188-191 and 314 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 188-191 and 314 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,515,257 to Jain et al in view of USPN 5,463,200 to James et al and in view of USPN 6,977,775 to Sasaki et al. Jain et al shows (Figure 1) laser source 26 which provides input to microlens array 10 and micro-mirror array 12 directs the beamlets independently. The via generation system comprises a focus lens 44. James et al describe (column 2, lines 1-9) the laser spot can be adjusted by changing the focal length of the lens or by moving the workpiece. Sasaki et al schematically show a focus element (e.g., Figure 7) of a sub-beam, not an f-theta optical element, and

Art Unit: 1725

which provides independent focus of individual beams. Further, see the Abstract of James et al for a description of splitting the beam into a plurality of beams and independent focusing with respect to how each beamlet strikes the workpiece, and James et al describe (column 8, lines 14+) the use of arrays of electro-optical and acousto-optical deflection devices.

Claims 190 and 191 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,515,257 to Jain et al in view of USPN 5,463,200 to James et al and in view of USPN 6,977,775 to Sasaki et al as applied to claim 189 above, and further in view of JP406043505A or JP02003051142A. Both JP406043505A and JP02003051142A describe well known acoustooptical deflecting elements. The use thereof would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art for modulating the beam.

Claims 188-191 and 314 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,515,257 to Jain et al in view of USPN 5,463,200 to James et al and in view of USPN 6,989,546 to Loschner et al and in view of USPN 6,433,348 to Abboud et al. Jain et al shows (Figure 1) laser source 26 which provides input to microlens array 10 and micro-mirror array 12 directs the beamlets independently. The via generation system comprises a focus lens 44. James et al describe (column 2, lines 1-9) the laser spot can be adjusted by changing the focal length of the lens or by moving the workpiece. Loschner et al show focus elements, not f-theta optical elements, which provide independent focus of individual beams. Abboud et al describe equivalent electron lens and optical lens depending on the beam tool being focused.

Art Unit: 1725

Adjustment of the focal length by moving a lens, as in Loschner et al, would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art because because the adjustment changes the spot size. Further, see the Abstract of James et al for a description of splitting the beam into a plurality of beams and independent focusing with respect to how each beamlet strikes the workpiece, and James et al describe (column 8, lines 14+) the use of arrays of electro-optical and acousto-optical deflection devices.

Claims 190 and 191 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,515,257 to Jain et al in view of USPN 5,463,200 to James et al and in view of USPN 6,989,546 to Loschner et al and in view of USPN 6,433,348 to Abboud et al as applied to claim 189 above, and further in view of JP406043505A or JP02003051142A. Both JP406043505A and JP02003051142A describe well known acoustooptical deflecting elements. The use thereof would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art for modulating the beam.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1725

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel M. Heinrich whose telephone number is 571-272-1175. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Samuel M Heinrich
Primary Examiner
Art Unit 1725

SMH